REMARKS

The present Amendment is in response to the Office Action mailed February 23, 2007. Claims 1-4, 14-17, and 27-30 are amended and claims 1-38 remain pending in view of the above amendments.

Please note that the following remarks are not intended to be an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed below are presented solely by way of example to illustrate some of the differences between the claimed invention and the cited references. Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

Rejection Under 35 U.S.C. § 112, Second Paragraph

The Office Action rejected claims 1-4, 14-17, and 27-30 under 35 U.S.C. § 112, second paragraph for indefiniteness on the grounds that there is insufficient antecedent basis for the limitation "the derived source text." Claims 2-3, 15-16, and 28-29 were rejected because of insufficient antecedent basis for "said accessing a source of unstructured data". Applicant has amended claims 1-3, 14-16, and 27-29 to overcome the rejections. Applicant respectfully requests withdrawal of the rejection under § 112.

Rejection Under 35 U.S.C. § 103

The Office Action rejected claims 1-9, 11-22, 24-35 and 37-38 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,715,468 (*Budzinski*) in view of U.S. Patent No. 7,039,875 (*Khalfay*). Claims 10, 23 and 36 were rejected as being unpatentable over U.S. Patent No. 5,715,468 (*Budzinski*) in view of U.S. Patent No. 7,039,875 (*Khalfay*) and further in view of Examiner's Official Notice. Applicants traverse the Examiner's rejection for obviousness on the grounds that the references – either individually or in combination – fail to teach or suggest each and every element of the rejected claims.

Embodiments of the invention are directed to the integration of mixed data (e.g., the integration of unstructured data including free text with structured data). This can be achieved by extracting attributes from free text and then integrating those attributes with structured data of a database. The process includes a linguistic parse of the free text as well as the identification of thematic roles from the linguistic parse. The claims have been amended to clarify the relationship between syntactic roles identified in a linguistic parse and thematic roles that are identified from the linguistic parse.

For example, claim 1 has been amended to clarify that linguistically parsing the identified text records generates a linguistic parse that includes syntactic roles. Syntactic roles, as noted in the specification, typically include the grammatical function of words and phrases beyond simple part-of-speech, e.g. subjects, direct objects, and indirect objects. Claim 1 then requires identifying thematic roles and relationships based in part on the syntactic roles. Identifying the thematic roles and relationships maps the syntactic roles including the grammatical information into a smaller set of semantically-focused components.

Using thematic roles and relationships, and their participants, is more efficient than using syntactic roles because the same event or relationship can be described in a number of distinct grammatical constructions. Thus, a single set of thematic roles can cover a number of event descriptions (i.e. sentences) that would require multiple sets of syntactic roles.

For example, the following sentences have different syntactic roles for "Jane," "John," and "bananas"

(1) Jane was given some bananas by John;

(2) John gave Jane some bananas; and

(3) Some bananas were given to Jane by John.

In (1), Jane is the subject, but in (2) she is the direct object, and in (3) she is the direct object. From a thematic role point-of-view, though, Jane is playing the role of recipient in all three cases. Continuing the example, in all three cases, John is the actor

– he is the one performing the act of giving – and bananas represent the object – they experienced the act of giving without being a participant who performed or received the action. By mapping multiple syntactic variations to a single set of thematic roles, fewer caseframes are needed. Consider the following.

(4)   <subj> <verb:give, passive> <direct object> <prep phrase:by>

(5)   <subj> <verb:give, active> <indirect object. <direct object>

(6)   <subj> <verb:give passive> <indirect object> <prep phrase:by>

Three different syntactic role patterns are necessary to cover (1) (2) and (3). A single thematic role-based caseframe, however, covers the three cases:

(7)   actor action:give object recipient

This illustrates one example of how the identification of thematic roles and relationships maps the syntactic roles including the grammatical information into a smaller set of semantically-focused components as required by claim 1. This example further illustrates that thematic roles can establish relationships between an action and between portions of the free text, as is required by claim 27 for instance.

The cited art fails to teach these elements of claim 1, among others. *Budzinski*, for example, is primarily directed to a memory system for storing and retrieving experience and knowledge with natural language. *Budzinski* is cited as teaching identifying thematic roles and relationships within the parsed text records. Applicant respectfully disagrees.

Budzinski suggests a syntactic method that includes steps of word isolation, dictionary look-up, function word processing, morphological processing, pattern recognition parsing, and ellipsis processing. *See* col. 4, lls. 60-63. However, a further review of these steps suggests that *Budzinski* is not teaching the identification of thematic roles and relationships as required by claim 1.

For example, word isolation identified numerics, words, punctuation, and base words with inflections or affixes. *See* col. 5, lls. 4-6. Dictionary look up looks up the syntax wordsets which each input word belongs to and passes this information to the

parsing step, which utilizes syntax trees. *See* col. 5, lls. 10-14. Morphological processing included the identification of the group of functions associated with a morphological word's base word, prefixes and suffixes; and the evaluation of one of these functions. *See* col. 5, lls. 51-55.

These steps taught by *Budzinski* relate to the syntax of the text, but fail to teach or suggest identifying thematic roles and relationships as required by claim 1. For at least these reasons, Applicant respectfully submits that claim 1 is patentable over the cited art.

Claim 14 has been amended to clarify the difference between a linguistic parse and thematic roles. While a linguistic parse may include syntactic roles such as subject, direct object, etc., claim 14 requires that a thematic role identify a relationship between an action in the text records and one or more of an actor, object, recipient, experiencer, etc. As previously discussed, the advantage of a thematic role can simplify the application of caseframes.

Budzinski, however, fails to teach identifying thematic roles and relationships as recited in claim 14. Claim 14 is therefore patentable over the cited art.

Claim 27 has been similarly amended to clarify that linguistically parsing the free text identifies syntactic roles. Claim 27 then recites that thematic roles and relationships, identified from the parsed free text, establish a relationship between a portion of the free text and an action included in the free text. As discussed herein, *Budzinski* fails to teach or suggest this aspect of claim 27, among others.

Khalfey is cited as teaching accessing a database of structured and unstructured data and of reading an access reference[1]. However, *Khalfey* fails to remedy the deficiency of *Budzinski* as discussed herein. Applicant does not, however, admit to the purported teaches of *Khalfey*.

For at least these reasons, Applicants respectfully submit that claims 1, 14, an 27 are patentable over the cited art. Dependent claims 2-9, 11-13, 15-22, 24-26, 28-35, and 37-38 are also patentable for at least the same reasons.

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[1] Applicant does not admit to the purported teachings of *Khalfey* advanced by the Examiner and reserves the right to address these issues as required.

Because claims 1, 14, and 27 are in condition for allowance as discussed above, claims 10, 23, and 36 are patentable for at least the same reasons.

Conclusion

In view of the foregoing, Applicants believe the claims as amended are in allowable form. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorney.

Dated this 23rd day of August, 2007.

Respectfully submitted,

/Carl T. Reed/ Reg. # 45454
CARL T. REED

Registration No. 45,454
Attorney for Applicant
Customer No. 022913
Telephone No. 801.533.9800

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